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SANDY SPOROPHORES

BY ALBERT A. HANSEN

During the summer of 1916, while botanizing along the sandy shores of Lake Superior in company with Dr. H. C. Cowles, of the University of Chicago, Prof. Winfield Dudgeon, of the Ewing Christian College, India, and others, an old dead pine tree with very peculiar outgrowths was found lying upon the sandy beach.

At first sight, the outgrowths were thought to be exudations of resin combined with sand. Upon further examination, however, hyphae were found running through the sand, suggesting strongly that the protuberances were really the fruiting bodies of a fungus which had become practically solid bodies of sand, due, perhaps, to the sand particles having become mechanically driven into and mixed with the vegetative tissue of the fungus.

Specimens were collected by the writer and identified as belonging to the saprophyte *Fomes pinicola* (Sw.) Cke. Identification was rendered possible by the finding of fruiting bodies which had yielded but slightly to the inroads of the sand. In fact, all stages, from almost solid bodies of sand to perfect sporophores, were found. In all these stages, the characteristic shape of the juvenile sporophores of *Fomes pinicola* was almost perfectly retained.

The phenomenon is evidently very unusual, since a diligent search through available literature failed to reveal any reference to similar abnormal growths. Specimens have been submitted to Dr. W. A. Murrill and Dr. L. O. Overholts, both of whom agree that they are abnormal sporophores of *Fomes pinicola*. The phenomenon is new to both of these mycologists.

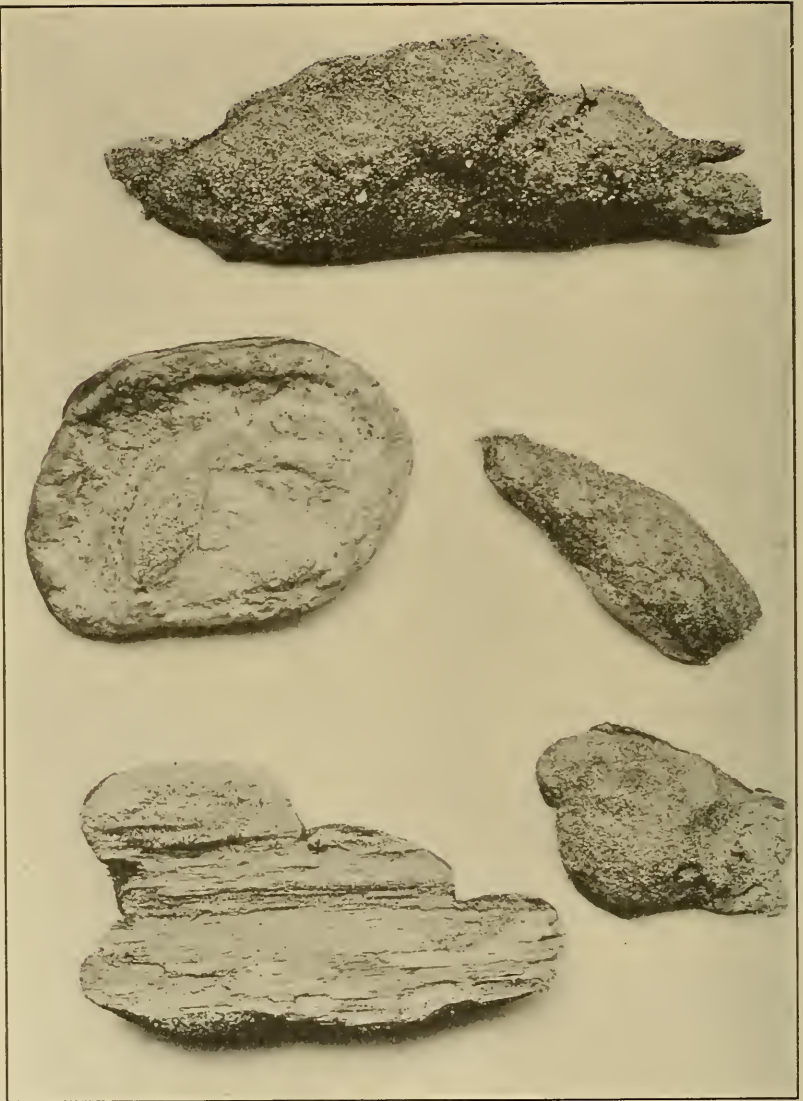


FIG. 1. The single specimen in the upper row shows the front view of a sandy sporophore. The specimen to the left in the middle row is a sporophore in which there is but a little sand, occurring on the projection to the left center and to a depth of about one-eighth inch. In the lower left hand corner, the back view of a sandy sporophore is shown, in which part of the woody tissue of the sub-stratum, with strands of mycelium, are plainly visible.

The position of the tree indicated that the sporophores did not simply grow into the sand and the hyphae thus grow around the sand particles, since the various stages were found just as readily upon the upper side of the trunk as on the lower, and the general appearance of the tree indicated that the position had not changed since the sporophores had formed. However, it is entirely possible that the shifting sands of the beach had covered the tree while the sporophores were forming, the hyphae thus possibly intertwining among the sand particles. Shifting of the sands with consequential reëxposure of the host, would account for the sandy fruiting bodies on all sides of the tree.



FIG. 2. View of a single sandy sporophore of *Fomes pinicola*.

The species of the tree was rather difficult to determine. The ecology of the immediate region aided somewhat in a possible identification. Within the memory of man, the vicinity had reached the pine-forest stage, but the recent rapid rise of Lake Superior probably caused rapid erosion of the beach. Temporary cessation of erosion, with the formation of dunes through the agency of *Ammophila arenaria* and *Hudsonia tomentosa*, both of which were abundant, probably caused the invasion of

the pine forest by the dunes. Retrogression resulted, as was evidenced by the numerous dead pines on the beach front. A few living pines had survived; two species, *Pinus strobus* and *Pinus resinosa*, being represented. The tree upon which the sandy sporophores were found was probably the latter species, *Pinus resinosa*.

In the opinion of Dr. Arthur Hollick, who has examined the specimens, the conclusions of the writer were verified. He regards the phenomenon as the result of the mechanical mixing of the sand with the hyphae and compares it with the sponges which have been washed upon the shore, rolled around in the sand, often presenting a similar appearance and result. He states that "this is not replacement of the vegetable tissue by sand and is not analogous to petrification or conversion into mineral matter."

This interesting material was gathered upon the sandy shore of Presque Isle, one of the Apostle Islands in Lake Superior, northern Wisconsin. The accompanying photographs were taken from material collected and sent to the botanical laboratories of the Pennsylvania State College. Specimens have been deposited in the herbarium of the New York Botanical Garden and in the herbarium and museum of the Pennsylvania State College.

THE PENNSYLVANIA STATE COLLEGE

THE LENGTH OF ERYTHRONIUM STAMENS

BY F. L. PICKETT

In a recent note in this journal* Paul W. Graff recorded some interesting observations on the length of stamens of various *Erythronium* species. The facts recorded are of chief interest because they have not appeared in standard manuals and because of the appearance of figures in some manuals which are untrue to the actual conditions. The length of stamens may not be of diagnostic importance, but it seems that illustrations should at least be true.

* Paul W. Graff, The Stamens of *Erythronium Americanum*, Torreya 16: 180-182.